

Attorney Docket Number 20020542.ORI 14

1. A device having adjustable position shafts comprising:

a first bearing assembly and a second bearing assembly spaced apart from the first bearing assembly, each bearing assembly having,

a sliding block bearing shaft,

5 a sliding block bearing for sliding up and down in the sliding block bearing shaft,

a threaded shaft portion extending into each sliding block bearing,

a ball screw inserted into the threaded shaft portion and engaging the bearing assembly for moving the sliding block bearing in the bearing housing shaft when the ball screw is rotated,

a worm gear attached to the ball screw,

10 a shaft having a thread thereon for engaging and turning the worm gear and rotating the ball screw to move the sliding block bearing in the sliding block bearing shaft of the bearing assembly when the shaft is rotated,

a means for connecting the shafts in the first bearing assembly and the second bearing assembly such that both ball screws are turned simultaneously to raise and lower the sliding

15 block bearings to the same position in the bearing assemblies at the same time.

2. A device having adjustable position shafts as in claim 1 including,

a means for rotating the shafts to raise or lower the sliding block.

20 3. A device having adjustable position shafts as in claim 2 wherein,

the means for connecting the shafts comprises a rod attached to the shaft in the first bearing assembly and to the shaft in the second bearing assembly.

4. A device having adjustable position shafts as in claim 1 including,

25 a means for measuring the position of the sliding block bearing in the sliding block bearing shaft.

5. A device having adjustable position shafts as in claim 4 wherein,

30 the means for measuring the position of the sliding bearing block comprises a potentiometer attached to the housing and a sliding contact on the potentiometer attached to the sliding bearing block.

6. A device having adjustable position shafts as in claim 5 including,
a motor for rotating the shaft to raise or lower the sliding block.

5 7. A device having adjustable position shafts as in claim 6 including,
a controller to run the motor for positioning the sliding bearing blocks to a desired
position.

10 8. A device having adjustable position shafts as in claim 2 including,
a knob attached to the shaft for rotating the shaft to raise or lower the sliding bearing
blocks.

9. A device having adjustable position shafts as in claim 5 including,
a display to indicate the position of the sliding bearing blocks.

15 10. A device having adjustable position shafts as in claim 1 wherein,
a fixed bearing having a shaft therein fixed in position in the bearing assembly proximate
the sliding block bearing shaft.

20 11. A device having adjustable position shafts as in claim 10 wherein,
a shaft connecting the shafts on the fixed bearings so that both the shafts on the fixed
bearings in the first bearing assembly and the second bearing housing rotate together.

25 12. A device having adjustable position shafts as in claim 10 including,
a shaft in the sliding block bearings, and a shaft connecting the shafts in the sliding block
bearings so that the shafts in the sliding block bearings rotate together.

30 13. A device having adjustable position shafts as in claim 1 including,
springs extending between the sliding block bearing and the bearing assembly for loading
the sliding block bearing.

14. A device having adjustable position shafts as in claim 1 including,
the means for connecting the shafts comprises a rod attached to the shaft in the first bearing assembly and to the shaft in the second bearing assembly.

a shaft connecting the shafts on the fixed bearings so that both the shafts on the fixed
5 bearings in the first bearing assembly and the second bearing housing rotate together.

a shaft in the sliding block bearings, and a shaft connecting the shafts in the sliding block bearings so that the shafts in the sliding block bearings rotate together.

15. A device having adjustable position shafts as in claim 14 including,

10 a means for measuring the position of the sliding block bearing in the sliding block bearing shaft.

16. A device having adjustable position shafts as in claim 14 including,

a crank mechanism to connect at least one shaft on one fixed bearing to a shaft on one
15 sliding block bearing to a transfer power from the shaft on the fixed bearing to the shaft on the sliding block bearing over the range of positions of the sliding block bearing in the sliding block bearing shaft.

17. A device having adjustable position shafts as in claim 14 including,

20 an idler block having an idler spur gear adjacent the bearing assembly, the center of the idler gear approximately at the center of the range of the sliding block bearing and a spur gear on the shaft of the sliding block bearing for engaging the idler spur gear as the sliding block bearing moves to any position in the sliding block bearing shaft such that the gears always mesh smoothly for a smooth power transfer.

25 18. A device having adjustable position shafts as in claim 16 including,

an idler block having an idler spur gear adjacent the bearing assembly, the center of the idler gear approximately at the center of the range of the sliding block bearing and a spur gear on the shaft of the sliding block bearing for engaging the idler spur gear as the sliding block bearing
30 moves to any position in the sliding block bearing shaft such that the gears always mesh smoothly for a smooth power transfer.

19. A device having adjustable position shafts as in claim 14 including,
a discharge tray between the first and second bearing assemblies, the discharge tray
having a dimpled discharge tray surface to reduce for objects transported over its surface.

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20. A device having adjustable position shafts as in claim 19 wherein,
the discharge tray surface has a curved surface to account for the sag of belts traveling
over its surface to reduce drag.